AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-41. (Cancelled)

42. (New) A method of monitoring the operationality of a member for cutting off the flow of a fluid through an extracorporeal circuit, said circuit having at least one length of deformable tubing on which there is at least one active flow cut-off member having at least one movable portion that can be actuated between an open condition, allowing the fluid to pass through said length of deformable tubing, and at least one closed condition, preventing the fluid from passing through said length of deformable tubing, said method comprising the following steps:

moving the movable portion of the cut-off member from said open condition towards said closed condition;

associating at least one dynamic parameter with a motion of said movable portion;

determining a value of said at least one dynamic parameter relating to said movable portion at least during said movement; and

checking that the value assumed by said at least one dynamic parameter satisfies a predetermined criterion of acceptability.

43. (New) A method according to claim 42, wherein the step of moving the movable portion of the cut-off member involves progressively compressing said length of tube.

44. (New) A method according to claim 42, wherein the value of said at least one dynamic parameter is determined in relation to at least one first position at the movable portion, said first position being intermediate between a rest position and a

working position, said movable portion being in the working position when the cut-off member is in the closed condition, and said movable portion being in the rest position when the cut-off member is in the open condition.

45. (New) A method according to claim 42, wherein said at least one dynamic parameter is related to a condition of motion of said movable portion, said at least one dynamic parameter being selected from:

p1, corresponding to a time interval dT taken by the movable portion to move between a first predetermined position and a second predetermined position, at a distance from said first predetermined position,

p2, corresponding to a speed of said movable portion at a first predetermined position,

p3, corresponding to an acceleration of said movable part at a first predetermined position,

p4, corresponding to a function F(p1) of said parameter p1,

p5, corresponding to a function F(p2) of said parameter p2,

p6, corresponding to a function F(p3) of said parameter p3, and

p7, corresponding to a function of two or more of said parameters p1, p2, p3.

46. (New) A method according to claim 45, wherein said movable portion reaches said second predetermined position subsequent to said first predetermined position.

47. (New) A method according to claim 42, further comprising determining values Vi assumed by said dynamic parameter at successive predetermined positions of the movable portion during said movement.

48. (New) A method according to claim 46, wherein said first predetermined position corresponds to a valve-open condition, and said second predetermined position corresponds to a condition in which said value is substantially closed.

49. (New) A method according to claim 42, wherein a correction step is carried out if said value of the at least one dynamic parameter does not satisfy said predetermined criterion of acceptability, said correction step modifying the movement of the movable portion of the flow cut-off member.

50. (New) A method according to claim 42, wherein an alarm step is carried out if said value of the at least one dynamic parameter does not satisfy said predetermined criterion of acceptability.

51. (New) A method according to claim 49, wherein the correction step comprises a sub-step of controlling the movement of the movable portion of said flow cut-off member.

52. (New) A method according to claim 47, wherein the values Vi assumed by said at least one dynamic parameter are compared with corresponding criteria of acceptability, said method comprising generating an alarm if a predetermined number of said values Vi do not satisfy the corresponding criteria of acceptability.

53. (New) A method according to claim 47, wherein the values Vi assumed by said at least one dynamic parameter are compared with respective ranges of acceptability and, if a predetermined number of said values are not within respective ranges of acceptability, a correction step is carried out, said correction step modifying the movement of the movable portion of the flow cut-off member.

54. (New) A method according to claim 53, wherein the correction step comprises a sub-step of controlling the movement of the movable portion of said flow cut-off member.

55. (New) A method according to claim 42, wherein said criterion of acceptability is either predetermined or is calculated as a function of one or more of the following parameters:

pi, corresponding to or proportional to the pressure in a vicinity of the length of deformable tube when the cut-off member is in the open condition;

f1, corresponding to the rate of flow of fluid through the length of tube when the cut-off member is in the open condition.

56. (New) A system for arresting the flow through an extracorporeal fluid circuit comprising:

at least one active flow cut-off member coupled to a length of deformable tubing forming part of said extracorporeal fluid circuit, said cut-off member having at least one movable portion that can be actuated between an open condition, said open condition allowing the fluid to pass through, and at least one closed condition, said at least one closed condition preventing the fluid from passing through said length of deformable tube;

an actuator connected to said cut-off member for moving at least said movable portion; and

a monitoring unit coupled to said actuator and capable of:

causing a movement of the movable portion of the cut-off member towards said closed condition;

determining a value of at least one dynamic parameter associated with a motion of said movable portion during said movement; and

checking that the value assumed by said dynamic parameter satisfies a criterion of acceptability.

57. (New) A system according to claim 56, wherein the cut-off member comprises a fixed portion defining, in conjunction with said movable portion, a housing

seat for said length of deformable tubing, the movable portion being configured, when moving towards the closed condition, to approach the fixed portion to progressively compress said length of deformable tubing.

58. (New) A system according to claim 56, wherein said dynamic parameter is determined in relation to a first position of the movable portion, said first position being intermediate between a rest position and a working position, said movable portion being in the working position when the cut-off member is in the closed condition, and said movable portion being in the rest position when the cut-off member is in the open condition.

59. (New) A device according to claim 58, wherein said at least one dynamic parameter is configured to provide information about a condition of motion of said movable portion and is selected from:

p1, corresponding to a time interval dT taken by the movable portion to move between a first predetermined position and a second predetermined position, at a distance from said first predetermined position,

p2, corresponding to a speed of said movable portion at said first predetermined position,

p3, corresponding to an acceleration of said movable portion at said first predetermined position,

p4, corresponding to a function F(p1) of said parameter p1,

p5, corresponding to a function F(p2) of said parameter p2,

p6, corresponding to a function F(p3) of said parameter p3, and

p7, corresponding to a function of two or more of said parameters p1, p2, p3.

60. (New) A system according to claim 59, wherein said monitoring unit is designed to calculate the value of said at least one dynamic parameter, said value

being the time interval dT taken by said movable portion to move from the first predetermined position to the second predetermined position, the second predetermined position being subsequent to and at a distance from the first predetermined position.

61. (New) A system according to claim 56, wherein said monitoring unit is designed to carry out a plurality of steps to determine values Vi assumed by said dynamic parameter at successive predetermined positions of the movable portion during said movement.

62. (New) A system according to claim 60, wherein said monitoring unit is designed to determine the value of said at least one dynamic parameter, said value being the time interval dT taken by the movable portion to move from the rest position, said rest position corresponding to the open condition of the cut-off member, to the first predetermined position.

63. (New) A system according to claim 56, wherein the monitoring unit is configured to activate a subsequent correction and/or alarm step if said value of the at least one dynamic parameter does not satisfy the criterion of acceptability.

64. (New) A system according to claim 56, wherein said criterion of acceptability is predetermined.

65. (New) A system according to claim 56, wherein said monitoring unit is capable of calculating the criterion of acceptability as a function of:

pi, corresponding to or proportional to the pressure in a vicinity of the length of deformable tube when the cut-off member is in the open condition;

f1, corresponding to the rate of flow of fluid through the length of tube when the cut-off member is in the open condition.

66. (New) A system according to claim 61, wherein said monitoring unit is configured to activate a correction step and/or generate an alarm if a predetermined number of said values Vi are not within respective ranges of acceptability.

67. (New) A system according to claim 63, wherein the monitoring unit is configured to control said actuator to vary at least a speed of movement of the movable portion of said cut-off member.

68. (New) A system according to claim 58, wherein said monitoring unit comprises:

a control unit, and

a device configured to detect at least one location of said movable portion among a plurality of successive positions, said device sending at least one corresponding signal to the control unit, said control unit determining a value of said at least one dynamic parameter in response to said at least one signal.

69. (New) A system according to claim 68, wherein said device comprises position sensors connected to said control unit.

70. (New) A system according to claim 68, wherein the control unit comprises at least one microprocessor block, and a memory connected to the at least one microprocessor block.

71. (New) A system according to claim 68, wherein the control unit comprises at least one central processing unit (CPU), and a memory connected to the at least one central processing unit or CPU.

72. (New) A system according to claim 56, wherein the monitoring unit is configured to execute said steps in response to an automatic preprogrammed command.

73. (New) A system according to claim 63, wherein the monitoring unit is configured to execute said steps in response to a detection of a dangerous situation.

74. (New) A blood treatment appliance comprising:

an extracorporeal circuit equipped with at least one blood treatment unit, said at least one blood treatment unit having at least first and second chambers, said at least first and second chambers being separated from each other by a semi-permeable membrane;

at least one collecting line configured to collect blood from a patient; said at least one collecting line being connected to an inlet of said first chamber;

at least one second line for returning the blood to the patient, said at least one second line being in fluid communication with an outlet of the said chamber; and

an apparatus for setting up a flow of fluid through said extracorporeal circuit, wherein said apparatus comprises a system according to claim 56.

75. An appliance according to claim 74, comprising at least one sensor for detecting predetermined parameters to monitor a correct operation of said appliance, said at least one sensor being configured to send corresponding signals to the monitoring unit for determination of potential undesired conditions.

76. (New) An appliance according to claim 74, wherein said at least one sensor comprises an air bubble detector connected to the extracorporeal circuit.

77. (New) An appliance according to claim 75, wherein, upon determination of said undesired conditions, the monitoring unit sends commands for closure of the cut-off member and for carrying out the steps of:

moving the movable portion of the cut-off member from said open condition towards said closed condition;

associating at least one dynamic parameter with a motion of said movable portion;

determining a value of said at least one dynamic parameter relating to said movable portion at least during said movement; and

checking that the value assumed by said at least one dynamic parameter satisfies a predetermined criterion of acceptability.

78. (New) A unit for monitoring the operationality of a member for cutting off the flow of a fluid in an extracorporeal circuit, said unit being capable of carrying out the steps of the monitoring method according to claim 42.

79. (New) A software program comprising instructions to be executed by a microprocessor unit said software program being capable of carrying out the monitoring method of claim 42.

80. (New) A program according to claim 79, said program being stored on a magnetic and/or optical recording medium.

81. (New) A program according to claim 79, said program being stored in a computer memory.

82. (New) A program according to claim 81, said program being carried by an electrical or electromagnetic carrier.

83. (New) A program according to claim 79, said program being stored in a read-only memory.